

**Notice of Allowability**

Application No.

09/496,374

Examiner

Jeff Piziali

Applicant(s)

KIDONO ET AL.

Art Unit

2629

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed 6 September 2006.
2. ☒ The allowed claim(s) is/are 1-9 and 12-25 (renumbered as claims 1-23).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
Jeff Piziali  
19 September 2006

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Allowable Subject Matter*

2. Claims 1-9 and 12-25 (renumbered as claims 1-23) are allowed.
3. The following is an examiner's statement of reasons for allowance:

The present invention comprises a solid-state imaging device. The closest prior art, Yanai et al (JP 10-150601 A -- and as recited as the current application's own admitted prior art - see Page 5, Line 14 of the instant application -- Note: For clarity of comparison's sake, the following paragraph refers to the reference numerals and figures as illustrated in the background of the instant invention) discloses a solid-state imaging device comprising: a pixel unit [Fig. 7, 1] constituted by a two-dimensional array of pixels for generating charge in correspondence to received light and accumulating the charge for a predetermined period of time; a vertical transfer unit [Fig. 7, 2] for vertically transferring charge from the pixels in the pixel unit; a horizontal transfer unit for horizontally transferring charge from the vertical transfer unit; shift gates [Fig. 7, 3] each provided between each pixel and the vertical transfer unit for reading out the charge in the pixels to the vertical transfer unit, gate electrodes [Fig. 7, 4A -- horizontal lines] for controlling the shift gates; and a plurality of lead lines [Fig. 7, 4A -- vertical lines] for connecting

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the gate electrodes to an external circuit and a plurality of connection terminals [Fig. 7, 6] for connecting the gate electrodes to the external circuit; the gate electrodes making up N [where  $N = 6$ , for instance] of gate electrode groups in which the lines belonging to each coset of modulo 6 within successive pixel rows are connected to common lead lines, 6 being a predetermined natural number between 4 and one half the number of pixels [where the number of pixels = 12, for instance] in a column, and N also being the minimum periodic unit of connections from the gate electrodes to the connection terminals within the successive pixel rows, the gate electrodes having common connection terminals to reduce the number (i.e. from 3 to 2, for instance) of the connection terminals to less than 12, and enable the gate electrodes having common connection terminals to be controlled with different timing of non-common connection terminals of the gate electrode groups (see Page 2, Line 15 - Page 5, Line 6 of the instant invention, as well as the full disclosure of Yanai).

However, Yanai does not expressly teach N being the minimum periodic unit of connections from the gate electrodes having the same modulo N value and belonging to different gate electrode groups to the connection terminals within the successive pixel rows, the gate electrode groups having common connection terminals to reduce the number of the connection terminals to less than N, and enable the gate electrodes having common connection terminals to be controlled with different timing of non-common connection terminals of the gate electrode groups. This distinct structural coupling arrangement has been incorporated into the pending independent claims (i.e. claims 1-6), thereby rendering them allowable.

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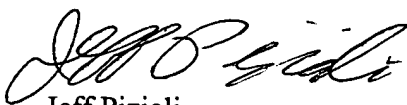
Any comments considered necessary by the applicants must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeff Piziali  
19 September 2006



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